# Translation



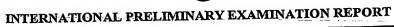


### PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference  97 750/M/nu	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)				
International application No.	International filing date (day/n	ionth/year)	Priority date (day/month/year)			
PCT/EP2003/010788	29 September 2003 (29	.09.2003)	30 September 2002 (30.09.2002)			
International Patent Classification (IPC) or national classification and IPC B01J 29/04, 37/08, B01D 53/94						
Applicant IKO MINERALS GMBH						
<ol> <li>This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</li> </ol>						
2. This REPORT consists of a total of	sheets, including	ng this cover s	neet.			
This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of						
These afficaces consist of a fe	01 5110013.					
3. This report contains indications rela	ting to the following items:					
I Basis of the report						
II Priority						
III Non-establishment	of opinion with regard to novelt	y, inventive st	ep and industrial applicability			
IV Lack of unity of inv	vention					
V Reasoned statement citations and explan	The state of the s					
VI Certain documents	Contain degraments sited					
VII Certain defects in the international application						
VII Certain observations on the international application						
Date of submission of the demand		Date of completion of this report				
27 March 2004 (27.03	2004)	01	March 2005 (01.03.2005)			
Name and mailing address of the IPEA/EP		orized officer				
Facsimile No.		hone No.				



١	Internati pplication No.
Ì	PCT/EP2003/010788

With regar	-	t	
		elements of the international application:*	
		tional application as originally filed	1
the the	descrip	tion:	, as originally filed
pag	ges	5-18	, filed with the demand
pag	ges	1-4 , filed with the letter of	
pa	ges	1-4 , filed with the letter of	
∑ the	e claims:	:	, as originally filed
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# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Internation polication No. PCT/EP 3/10788

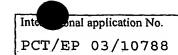
### I. Basis of the report

1. This report has been drawn on the basis of (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.):

The amendment to the description, annex page 3, lines 2-3, submitted with the letter of 21 January 2005 is not directly derivable from D4.

This report has been established without taking this amendment into account.

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT



NO

v.	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement						
1.	Statement				_		
	Novelty (N)	Claims	1-15	YES			
		Claims		NO			
	Inventive step (IS)	Claims	1-15	YES			
		Claims		NO			
	Industrial applicability (IA)	Claims	1-15	YES			
		Claims		NO			

### 2. Citations and explanations

This report makes reference to the following documents:

- D1: LI, W. ET AL.: "Selective catalytic reduction of nictric oxide by ethylene in the presence of oxygen over Cu2+ ion-exchanged pillared clays" APPLIED CATALYSIS B: ENVIRONMENTAL, vol. 11, 1997, pages 347-363, XP002277190
- D2: YANG, R. T.; LI, W: "Ion-Exchanged Pillared Clays: A New Class of Catalysts for Selective Catalytic Reduction of NO by Hydrocarbons and by Ammonia" JOURNAL OF CATALYSIS, vol. 155, 1995, pages 414-417, XP002277191
- D3: SADYKOV VLADISLAV A ET AL: "Nanocomposites based upon alumina and zirconia pillared clays loaded with transition metal cations and clusters of precious metals: synthesis, properties and catalysis of Nox selective reduction by hydrocarbons" THE 1999 MRS FALL MEETING - SYMPOSIUM F 'NANOPHASE AND NANOCOMPOSITE MATERIALS III' BOSTON, MA, USA NOV 29-DEC 2 1999, vol. 581, 29 November 1999 (1999-11-29), pages 435-440, XP008029911 Mater Res Soc Symp Proc; Materials Research Society Symposium - Proceedings 2000 Materials Research Society, Warrendale, PA, USA
- D4: CROCKER M. ET AL.: 'Preparation of acidic forms of montmorillonite clay via solid-state ion-exchange

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

reactions" CATALYSIS LETTERS, vol. 15, 1992, pages 339-345, XP002277192

- D5: PATENT ABSTRACTS OF JAPAN, vol. 1996, no. 09, 30 September 1996 (1996-09-30) & JP 08 117597 A (BABCOCK HITACHI KK), 14 May 1996 (1996-05-14)
- 1. The subject matter of claims 1 to 15 is novel over D1 to D5.
- 2.1 The present application meets the requirements of PCT Article 33(1) because the subject matter of claims 1 to 15 appears to involve an inventive step within the meaning of PCT Article 33(3).

The subject matter of independent claim 1 differs from D1 to D3 in that ion exchange and calcination take place simultaneously by means of heating.

This feature leads to a simpler production method.

D1 to D3 do not contain anything that would suggest that the catalysts can be produced more simply in this way.

Although D4 describes ion exchange by means of heating (wherein possibly very small crystallites are formed, see page 342: "from which it may be concluded ... XRD"), it does not describe simultaneous calcination.

Since solid phase ion exchange can be carried out in a number of ways, replacing liquid phase ion exchange by solid phase ion exchange at calcination temperatures is not an obvious solution to the problem of simplifying the production method.